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Vol. CVIII JUNE, 1914 Number 6

NASHVILLE JOURNAL
OF
MEDICINE AND SURGERY

CHARLES S. BRIGGS, A. M., M. D., Editor and Proprietor
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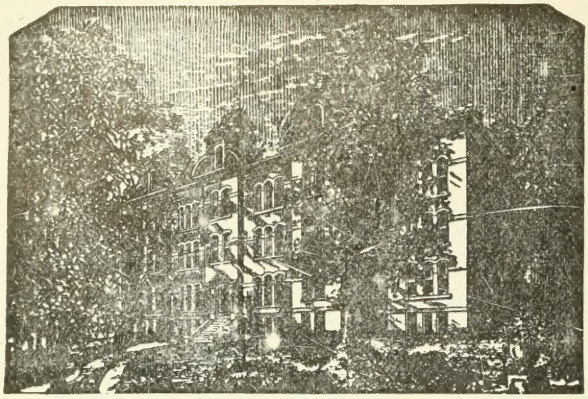

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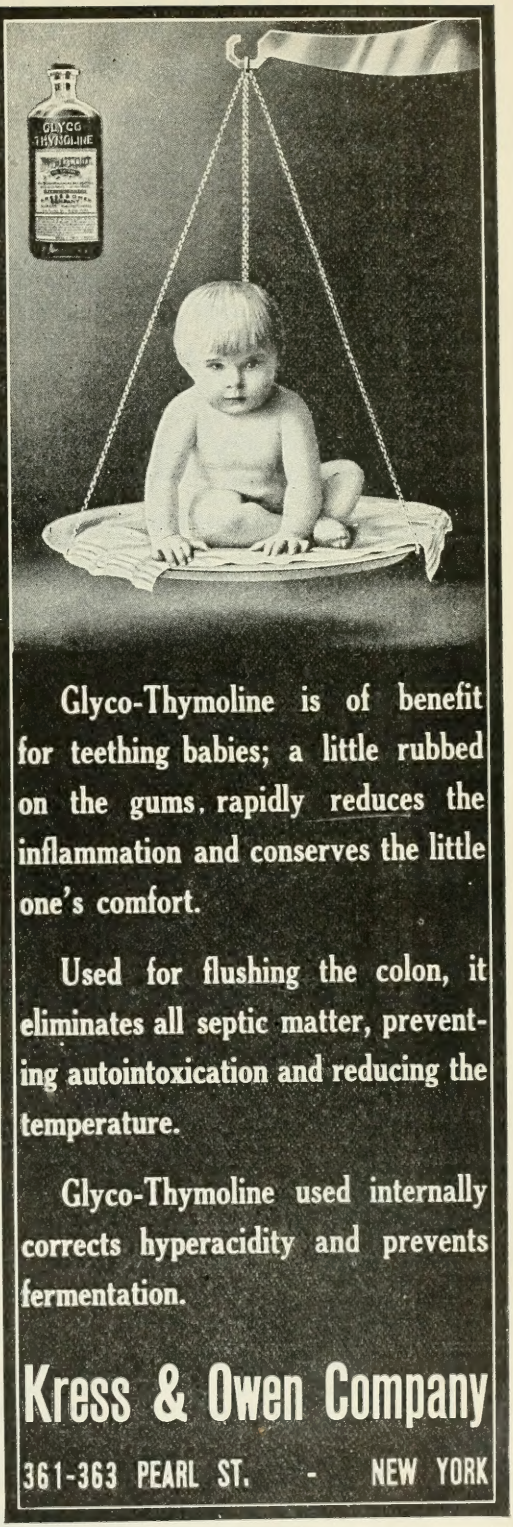

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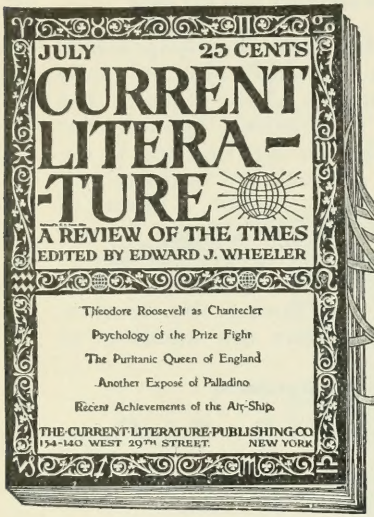
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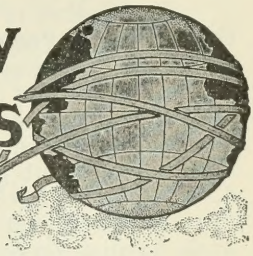

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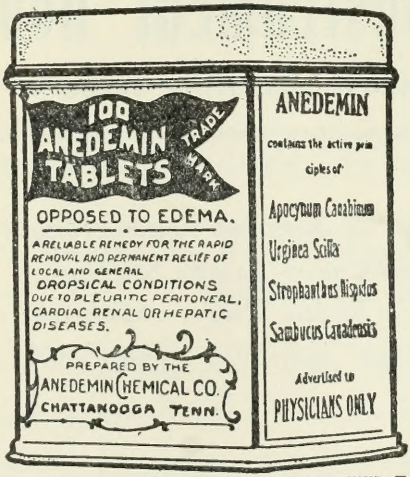
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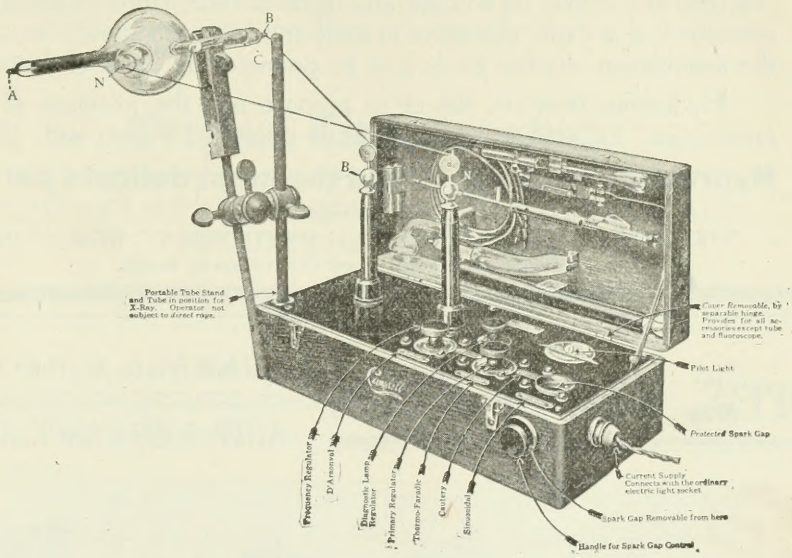

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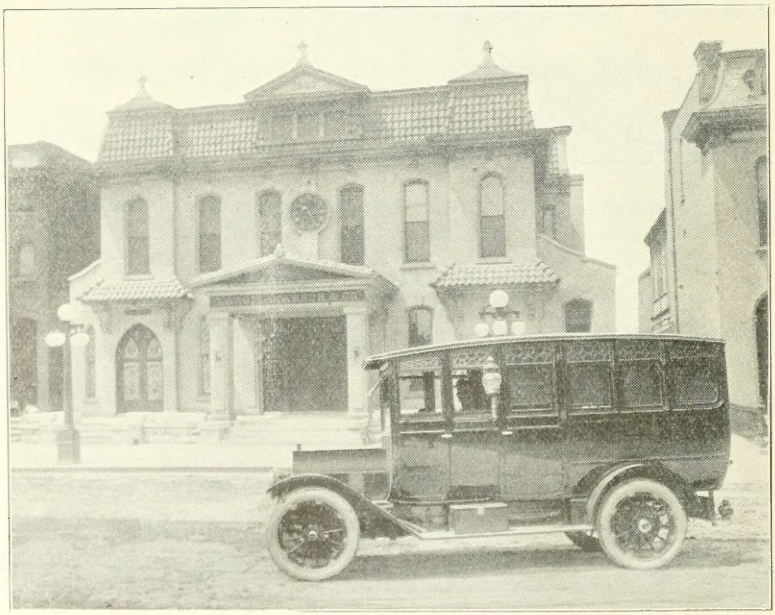

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NASHVILLE JOURNAL
— OF —
MEDICINE AND SURGERY

CHARLES S. BRIGGS, A. M., M. D., Editor

VOL. CVIII. JUNE, 1914. No. 6

Original Communications

SOME EFFECTS FROM SPIRIT AND DRUG TAKING ON THE UPPER AIR PASSAGES.

By T. D. CROTHERS, M.D., Hartford, Conn.

My purpose in this paper is to give a clinical outline of facts relating to some of the causes of inflammatory states of the throat and nose, as it appears to the general practitioner and nerve specialist.

There can be no doubt that all practical specialists in this field of the throat and nose are familiar with these general causes, but they have not so far attached the importance to them which they deserve, simply because they are not familiar with the modern research work concerning the effects of alcohol and drug taking. The general profession and specialist in other departments of medicine owing to the multiplicity of new topics and tremendous advances in all departments of medicine have paid little attention to the work done in the laboratory and along lines of research concerning the physiological and pathological action of alcohol on the body. Revolutionary statements of facts and conclusions when appearing in medical journals are usually regarded as indications that the authors are partisans and unreliable, and when these facts filter through the secular press they are treated with more or less contempt as visionary and unreal. There is a

childish fear among medical men about endorsing any new statements concerning the bad effects of alcohol,—of being called cranks. New theories concerning tuberculosis or cancer, or new drugs, or any other novel questions increase the interest and attracts renewed attention, but when anything new is said concerning the injury from alcohol there is suspicion of exaggeration. The general profession does not realize that researches concerning the physiological and pathological effects of this particular drug indicate the most revolutionary theories and conclusions, and in the near future the wonder will be why these facts were not recognized before. Clinically the effects of spirits and drugs on the upper air passages appear to depend on several distinct causes either acting alone or in conjunction in the early stages. Later in the progress they are all combined. First, the direct irritant action upon the bronchi, pharynx and nasal membranes with thickening, congestion or anemia. 2nd, the reflex, irritant action from gastritis and other disturbances and irritations to other parts. Third, in organic changes and paralysis of nerve tracts, cirrhotic states of the liver and kidneys and mucous membranes generally. In my experience of nearly thirty years in the constant study and care of spirit and drug neurotics, it is an exception to the rule to find persons who have used spirits and drugs that do not suffer from catarrh and subacute inflammations of the throat and nose. It is always an interesting question whether these inflammatory changes preceded the spirit and drug taking as exciting and predisposing causes, or have followed as a natural result. Many persons have a history of nasal and throat congestion due to direct irritation, followed by exhaustion and debility for which spirits and narcotics have been found most agreeable remedies. Common examples of persons breathing air containing irritants and exposed to great changes of temperature, who have found cocaine, morphine and other narcotics to give great relief.

This is quickly followed by an addiction and a distinct drug neurosis in the future. Other persons have bronchitis and inflammatory states of the throat which are treated by spirits covered up with syrups, and the narcotic effect is so pleasant that the drugs are continued. All specialists and general physicians understand

that there are degrees of susceptibility to take on inflammatory states of the membranes of the throat and nose from very slight and apparently insignificant causes. There is present a feeble resisting power in the mucous membrane to any changes and irritations which is frequently inherited and depends very largely on the defective nerve centers controlling these parts, as well as want of training, bad surroundings, bad diet, etc. The direct irritant effect from alcohol on the membrane is well illustrated by comparsion with its effects on the surface of the hand or body. Placing a drop of alcohol on the surface, a sensation of chill and irritation which follows will be increased by more alcohol until inflammation and destruction of the skin follows. This is an example of its action on the mucous membrane of any tissue it comes in contact with. This is due specifically to its rapid water absorbing properties, abstracting the moisture from the tissues with such rapidity as to give a sense of chill, irritation and finally end in inflammation. These effects are noted in alcohol as a beverage in any form and its passage over the mucous membrane with a sense of irritation and burning, ,due to its water abstracting property. Water is used before and after spirits are taken to overcome the sensation, the more pronounced the irritation, the greater the amount of alcohol. It will be readily understood that the frequent and continuous use of spirits producing a constant irritant action of a greater or less degree, is a direct cause of inflammatory states of the membrane. Clinical observation confirms this, not only by examinations of the throats of drinkers, but of the changed tone of voice indicating thickening and changes of the vocal cords. In chronic cases, both the bronchial and nasal tones are so pronounced and the carrying properties of the voice is so markedly lowered and its volume is diminished and replaced by harsh, jerking, indistinct echoes, and even beer drinkers who sing bass lose their power of control and the tone becomes broken and harsh.

Leading singers quickly discover that alcohol and tobacco seriously impair and finally destroy their vocal powers. We shall show that these effects are due to both local and constitutional changes in the blood vessels and nerve fillaments, and absorbents.

It will be new to many persons that the congestion of the face so common in spirit takers is an exact duplication of what occurs in the membranes of the brain and mucous surface of the throat and nose. One with an intensely red or pallid face, showing hyperemia or anemia, has deranged capillary circulation of all the membranes, particularly those rich in blood vessels. The vasomotor paralysis of the facial nerves, diminishing the contractile power of the arteries on the face, is the same in the throat and nose. A recent German writer declared that: "this palsy is followed by varicose states of both veins and arteries in the membranes of the throat and nose accompanied with fibrinous deposits and exudations." The supposed stimulant action of alcohol is found to be an irritant and a paralyzant, and also a narcotic. It is a chemical irritant absorbing the water from cell and tissue. The flushed face of the spirit drinker is simply palsy and narcotism of the vaso-moter centers, regulating the circulation and the contraction and dilatation of the walls of the blood vessels. The heart from the use of spirits is greatly increased in activity, more blood is sent to the surface, but with it comes the diminished contractile power of the nerves to force the blood back again, hence the forcing of the blood to the surface distends the blood vessels and deranges the circulation more and more with each repetition until permanent degeneration follow. The whole capillary system of the membranes of the brain and upper air passages and the face is disturbed, deranged and diseased. Drugs which produce anemia or blanching and diminution of the flow of blood in the vascular structures are followed by the same results. The nutrition suffers from this profound derangement and the metabolic processes are interfered with. The toxins and waste products are retained and form new centers of irritation.

Elimination is checked and suppressed. The mucous membrane of the throat and nose are very vascular and abundantly supplied with arteries, veins and nerves, and hence suffers more directly from this cause. This is evidenced by the increased secretion of water and mucus. After a time the flushed face from the use of spirits becomes permanent and the walls are hypertrophied and the nerves atrophied. The mucous membranes suffer in the same

way. In constant spirit drinkers the burning sensation of the throat becomes less and less, and strong spirits produce only slight sensations. Hypertrophy of the membranes and mucous exudations with subacute inflammatory states follow, then follow bronchial coughs and distressing irritations of the nose and throat, resisting all ordinary treatment. In many instances these conditions are regarded as premonitory symptoms of tuberculosis and are treated with spirits, morphia, cocaine and other narcotics. Dr. McKenzie of London remarked long ago, "that it was comparatively easy to cure bronchial and nasal inflammatory states in persons who abandon all use of alcohol or narcotics, but unless this was done the disease would continue almost indefinitely." The changes in the voice are very significant symptoms of both the inflammatory conditions of the nose and throat, and their influence on the vocal cords. Good judges assert that it is possible from a study of the voice to determine the health or disease of the membranes, and also that there are certain peculiar sounds which distinguish the spirit drinker from the opium or cocaine taker. In a general way the spirit drinker has a rasping explosive echo, while the drug taker has a tremulous, soft, muffled tone of voice. It is very evident in a singer where tobacco and spirits sharpen and ruffle the timber and volume of the tone. A tenor singer invariably exhibits this use of spirits or tobacco by his inability to sustain high or continuous notes, and by his constant tendency to sharp the notes. Some very interesting studies have been made with a phonograph to show the change of the voice and improvement following total abstinence in persons who have chronic inflammatory conditions of the throat and nose. The patient talks into the phonograph at different times, pronouncing sentences, or singing bars, the notes, volume and timber of the voice is thus accurately recorded. Defects of the senses, particular of the taste, smell and hearing following these inflammatory states of the membranes, is a most fascinating field of study, because the changes and variations can now be noted with a degree of exactness, also perversions of sight and mental changes, due to these inflammations are of intense interest. Many of these conditions are physiological variations, not only local, but con-

stitutional. There are now certain conditions and effects which may be considered positive from the amount of evidence on which they are based, thus the constitutional action of alcohol, not only as a vaso-motor paralyzer, but as a disturber of nutrition, is continuous. The results of capillary congestion and anemia is diminished osmosis between the veins and arterial capilaries, also associated with defective oxygen carrying properties of the blood and accumulation of carbon and fibrinous deposits. The blood corpuscles are shrunken and deranged and do not take up oxygen from the lungs freely. This is readily seen in examination of the blood of persons who are using spirits. In the blood currents the red corpuscles are diminished in exact proportion as the system becomes saturated with spirits. The phagocytes are shriveled and diminished, the hyperemias and anemias can be traced, not only in the blood counts, but in the blood cells. Another fact equally well established is that vascular congestion and defective circulation due to alcohol is always followed by accumulated toxins which form deposits and foci for the development of inflammatory states and with this there is diminished power of resistance and ability to neutralize and throw off the germs lodged on the surface. Another fact that alcohol coming in contact and carried by the blood vessels to the capillaries, has a special corroding action on the cells and dentrities, not only its chemical water-absorbing properties, but by its union with the granular matter of the cell. Another fact which has not been noted is this, that when the system is saturated with spirits to a degree it is exhaled from the lungs as vapors and spirits, the mucous membranes of both throat and nose suffer directly from its irritant action. This point of saturation is not confined to local congestions of any one part of the body, but extends to all the organs, particularly of the liver and kidneys. Its action is both corrosive and erosive of the dentrites, cells and tissues and is to all intents and purposes a veritable neuritis. Recently we have recognized that the so-called rheumatism and pains, both local and general in the extremities, in persons who use spirits are due to inflammations of the nerve extremeties and are literally neuritis, also that many of the conditions termed lagrippe, malaria, biliousness and

other derangements, associated with chills, fevers, and exhaustions, are purely toxæmic. The poisons from alcohol and other irritants have concentrated on the nerves of the extremity as well as in the degeneration of the mucous membrane, checking elimination and practically encouraging states of disease and inflammation. The influences so prominent at this time of the year are very pronounced and intractable in the spirit and drug taker. Sir. Wm. Barlow declared "that alcohol was the largest factor in the production of lagrippe and chronic catarrhs of the throat and nose, by deranging the capillary circulation and destroying the nutrition and vitality of the nerve cells." The periodic drinker who uses spirits to excess, then abstains, recovers in some degree from the damage and immediate effects of spirits, but the continuous user of wine or beer or other spirits, in so called moderate doses, has always pronounced throat and nose affections. It may be of a minor character, and not attract much attention at first, and is treated by home or proprietory remedies, but later, when the inflammatory conditions become chronic, degenerations and growths follow, and also ulcers and distinct local inflammatory conditions. Where the spirits are removed the improvement is so marked as to prove beyond question the intimate relation as cause and effect between the spirits and these disorders.

Probably one of the most dangerous and seductive drugs on the mucous membrane is cocaine, which has come into very common use, both medically and surgically, for its analgesic action. Its value depends on its sudden and pronounced paralysis of the nerve fibers and capillary blood vessels, producing pronounced blanching and anemia. The sensory fibers are suspended first and the walls of the blood vessels are paralyzed, the blood is driven out, then the motor nerves are checked and solved up. When this action passes off there is an intense vascularization and secretion of water and mucus and a degree of irritation that calls for a repetition of the drug. It is asserted that this action is due to the chemical combination of the drug with the plasma and cell contents, suspending their action at once, and this is reflected to the brain and spinal cord, later as an irritant and still later, where the amount is large and the use continuous, the effects are noted by

peculiar hallucinations subject to this paralyzing action becomes cirrhotic and the walls of the blood vessels retract and bcome varicose, nutrition is lessened and degeneration of a corrosive nature follows. The blanching of the face is palsy, both of the constrictors and dilators. All sensation is cut off and this condition on the membranes of the nose is followed by a deceptive sense of comfort following its use. The drug is literally a narcotic suspending nerve activity and nutritional force. After a time this derangement extends to the higher cerebral functions and becomes a neurosis of the most dangerous and seductive character.

Constant erosion follows which is concealed and covered up. Cocaine prescriptions for diseased conditions of the throat and nose have proved very useful and valuable remedies, but they must be given with care and discretion. The paralysis resulting from the constant use of this drug in the nasal passages extends down to the throat and larynx. And the changed tone of the voice registers this inflammatory condition, the hearing is also effected, profound anemia of the nasal passages is often a symptom of the use of this drug. It should be remembered that many persons take this drug secretly, but after a time the mental and other symptoms betray them.

Tobacco is another irritant and narcotic to the upper air passages. Like cocaine, its effects are direct, and in chronic conditions where the system is thoroughly infected, it is an active cause of disease of these membranes. One of the worst forms in which it can be used is the cigarette, and this is due specially to the combustion taking place in close proximity to the mouth, where all the gases and products come in immediate contact with the mucous membrane. In a pipe and cigar many of these poison products are condensed and deposited in the stem of the pipe and body of the cigar, and only a small part are carried into the mouth. In the cigarette, where the smoke is inhaled and driven through the nose, its action is direct and cumulative. The nicotine and other products are corrosive and irritating, not only to the terminal nerves, but the capillaries and these poisons are absorbed and carried to all parts of the body. The injury not only disturbs the

surface circulation and the osmotic and metabolic changes, but it destroys nutrition and produces states of local starvation. The cigarette smoker has both anemia and hyperemia of the mucous membrane of the throat and nose. He complains of catarrh and defective smell and change of voice, and his nerves become hypersensitive. The inhalation of small quantities of smoke and other products are more thoroughly absorbed than if the quantity was larger and the smoking more rapid. There are various degrees of resistance to the poison of tobacco, but its continuous absorption is marked, not only on capillary disturbances, but on the nerves and brain sooner or later. Morphine and other forms of opium have no specific direct effect on the upper air passages except that of a narcotic, and these effects are followed by anemia and general pallor of the face and eyes. The senses are diminished and low forms of subacute inflammatory states of the membranes follow. They are thickened and fibrinous deposits follow. The control of the voice is weakened and general conditions of exhaustion appear.

Other drugs have a similar effect, only more pronounced, on the constitution. Inhalation of gases often produce intense congestion by its irritative action not only on blanching, but paralyzing the circulation. This irritation is followed by inflammaton. In all this there is derangement, perversion and injury acuteness of this condition depends very largely on constitutional conditions and degrees of vitality to overcome the local effects of irritants. In my particular work, very marked changes are noted in the disappearance and practical relief from long standing catarrhs and chronic inflammation of the throat and nose by abstinence from spirits. I have noted a number of cases of bronchial troubles, supposed to be tuberculosis, occurring in moderate drinkers. Removal of spirits, nerve rest and constitutional remedies are often followed by complete recovery. A number of persons in these times of stress and strain who are spirit and drug takers, using it secretly and who suffer from throat and nasal troubles, are the subject of much anxiety to both physicians and friends. When their real trouble is discovered and their drugs removed, the obscurity of the case clears up. One is greatly

impressed with this fact by the number of persons supposed to be temperate who have decided disorders of the voice and who frequent the specialist for conditions that are ill defined. Efforts to give relief by catarrhal remedies are unsuccessful and a great variety of cases are considered as active, together with degrees of debility and general feebleness. Such persons go to sanitoriums and recover, in reality they have become abstainers and the degenerative effects of alcohol has been removed. There can be no doubt that rhinitis and bronchitis may precede tuberculosis and active efforts to check these inflammatory states and prevent their socalled passage downward of great uncertainty, unless the general constitutional condition of the persons known. The general fact is becoming more and more prominent that the effects of alcohol and drugs, either openly or secretly, in small or large doses, falls most heavily on the capillary circulation, and this derangement predisposes to the growth and development of bacteria, and with this a diminution of the resisting forces of the body which form a chain of causes that should never be overlooked or misunderstood. I conclude with the Statement made—overlooked or misunderstood.

I conclude with the statement made some years ago by the late Dr. Gross of Philadelphia: "The upper air passages reflect the damage of alcohol and tobacco, and suffer most severely and should always be considered in a study of inflammations of these parts.

Selected Articles

CAN CONSUMPTION BE CURED?

By Herbert C. Clapp, M.D., Boston.

Yes, most decidedly, *yes;* but this answer needs to be explained to prevent misunderstanding. On the one hand, we need to avoid too much pessimism which paralyzes effort, and on the other too much optimism, which leads to carelessness and neglect, which are very often fatal. In looking at the doughnut, we must not forget to see in it the hole. Naturally enough, as a result of the reported successes of recent years, the pendulum has now swung too far the other way, and many people have become too enthusiastic, and now seem to believe that the cure of tuberculosis is as easy as rolling off a log.

On the contrary, it can not be stated too emphatically that, while in many cases, largely proportionate to the earliness of the stage in which it has been discovered and the proper measures applied, it can be cured; yet to reach this result is not by any means an easy task (with comparatively few exceptions), and generally requires a vigorous fight for many months and often for years, before victory can be won, in which contest certain moral qualities and strength of character play a very important part.

It is extremely desirable, therefore, that the public should entertain a correct view on this subject, in order to encourage sane and rational methods of living and treatment for the benefit of individual cases, as well as to be able to institute proper public measures for the control of the disease, and for the prevention of its spread in the community.

The comparative successes in the treatment of tuberculosis during the last thirty years or more have to such an extent stimulated the enthusiasm and optimism of some members of the medical profession that they have publicly and privately declared their

belief in the possibility of the total extermination of the disease in the not distant future; and some of them have even attempted to set the date approximately, basing their judgment on the progress already made. I confess that I have never been able to sympathize with them in these views, any more than with those who predict that the end of the world is near at hand. Indeed, I doubt if we ever shall rid ourselves entirely of this dread disease, at least as long as human nature remains as it is now, on which subject much might be said. Even smallpox, although wonderfully diminished, has not yet become extinct as predicted as a result of vaccination. Nevertheless, vaccination, if properly performed, and universally adopted, ought to be practically specific against it. But just here comes in the human element, and the mental obliquity which prevents some people from recognizing its efficacy, in spite of demonstrable proof. The difficulties in the way of the complete extermination of tuberculosis for several reasons are ten times as great as those of smallpox. The social evil and its immediate results in disease are apparently no nearer extinction than many years ago, and many moralists confess themselves almost discouraged. The reason is that here the human element and the frailties of human nature play a more prominent part than in the case of tuberculosis, and a thousand times more prominent part than in the case of smallpox.

The estimation of some enthusiasts that tuberculosis would become extinct in twenty or twenty-five years, based on figures already obtained as to its diminution, reminds me of the calculation of the faithful young wife of the impecunious artist, who, after many months of fruitless toil had at last sold a picture which took him half a day to paint, for $25. "Splendid," rejoiced the optimistic wife, "$50 a day for 300 working days in the year means $15,000 yearly income. We surely can live on that."

When we consider that among the predisposing causes of consumption are poverty, dissipation, overwork and worry, to say nothing of the rest, is it strange that we should despair of the early and complete eradication of the disease, no matter how enthusiastic we may become as to our wonderful success in treating people who are not too heavily handicapped?

Can consumption be cured? Fifty years ago this question would have been answered in the negative throughout the entire world. People generally considered it a hopeless disease, and the medical profession looked at it with a folding of the hands and a grim contemplation of approaching death, which paralyzed their best efforts. If occasionally a patient got well. it was by the grace of God, and not often as a result of human endeavor. Since then there has been a great change in the outcome of the disease, for the most part owing to modern hygienic, so-called sanatorium methods, which took their real start not far from that time in Goerbersdorf and Falkenstein, in Germany, and which in this country were first heard of to any great extent in the sanatorium in the Adirondacks founded by the illustrious Trudeau thirty years ago. The younger physicians in this country, who have seen many cases get well, can not possibly have any adequate conception of the comparative feelings of the older ones in this regard, especially of those who have largely treated this disease, how they have risen from the depths of despondency to the joys and enthusiasm of success, even if perfection has not yet been attained.

A large amount of money has been spent in recent years in the antituberculosis campaign, and much time and thought given to it, as well as hard work, and that it has been worth while is attested by the chart published in the recent report (the tenth) of the Boston Association for the Relief and Control of Tuberculosis, which shows that the death rate from the disease *since* the announcement in 1882 of the discovery by Koch of the tubercle bacillus(that is, for the last 32 years), has decreased from 420 to 150 for every 100,000 of Boston's population, while during the 32 years *preceding* this discovery, that is from 1850 to 1882, the decrease was only from 475 to 425.

The great statistician, Frederich L. Hoffman of the Prudential Insurance Co. of Newark, N. J., in an elaborate and lengthy paper read before the National Association for the Study and Prevention of Tuberculosis on May 9, 1913, among other statistics, to illustrate the tendency of the tuberculosis death rate in the United States during a long period of time, brought together the

combined mortality of the cities of New York, Philadelphia, and Boston for the 100 years commencing with 1812. From this it appears that there was no decided tendency toward a persistent reduction until 1882. Since that year, however, the tuberculosis death rate has persistently diminished from almost 390 per 100,000 of population in 1881 to 180 in 1912. This shows, he thinks, the most conclusive evidence on record that the deliberate, thoroughly intelligent and nation-wide campaign against tuberculosis on the principle of its being an infectious disease and transmissible from man to man, has been successful beyond expectations. Mr. Hoffman's statistics for a group of 50 large American cities show that there has been in this larger group also a persistent and very considerable decline in the tuberculosis death rate since 1882, that is, from 335 per 100,000 of population in 1881 to 166 in 1911. In England the death rate from tuberculosis has dropped nearly 50 per cent in 40 years. In London the drop was 33 per cent between 1901 and 1910. There has likewise been a great drop throughout the civilized world. Much testimony along similar lines could be presented. The greater part of this decline has been owing strictly to antituberculosis work since the modern campaign began. The comparatively small decline in the rate before 1882 was probably mostly due to the general improvement in public sanitation and hygiene. And yet this general improvement goes so much hand in hand with strictly antituberculosis work and is really such an integral part of it, that it is well-nigh impossible to dissociate them. Better construction of houses with reference to light and air, better drainage, better regulation of the hours of labor, better ventilation of factories, better food, less drunkenness and other improvements in the social condition of the people, would naturally tend to lower the tuberculosis death rate, even if this were not the principal object in mind.

One of the best arguments to be brought forward in favor of the curability of consumption, an argument indeed, which is absolutely incontrovertible, is that derived from post-mortem examinations of persons who have had the disease and have recovered from it, and have subsequently died of some entirely different disorder ,and yet in whose bodies have been found by skillful

pathologists unmistakable evidences of healed tuberculous lesions. Such post-mortems are made very frequently abroad, especially on hospital patients, far more frequently indeed than in this country. This evidence has been presented so many, many times, that now it is accepted by all educated physicians, and is a conclusive answer to some scoffers who even at this late day occasionally pretend that a patient, especially in the incipient stage, who claims to have been cured of tuberculosis, never could really have had the disease at all.

Indeed these findings are so common that we are forced to believe that some people have had the disease and have recovered from it spontaneously, perhaps often without knowing that they ever had had it.

Another proof of the curability of consumption, and one which particularly and immediately interests us, comes from the reports of the modern sanatoria for its treatment, which are now so numerous throughout the civilized world, and which all tell essentially the same story, though differing in detail. Many are cured also by the same kind of sanatorium methods either at home or elsewhere outside of a sanatorium; but naturally it is very difficult to get statistics from such. Even from the reports of sanatoria it is not easy to get figures which are comparable with each other and which, therefore, can be conglomerated, for the reason that their bases of comparison are so variant. Some aim to take only incipient cases, some mostly advanced, and some all grades. The classifications of cases and results also differ in various ways, although an attempt at uniformity is being made. For instance, at our Rutland Sanatorium, after some years' trial of its own classification, the adoption of that of the National Association, for the sake of uniformity with other institutions, at once resulted in the dropping of the percentage of "apparently cured" cases discharged, because many of the patients were unwilling to remain during the three months now demanded after the cessation of all their active symptoms. Some of these undoubtedly kept up their good record after they had left, and later reached the desired goal; but of course by the terms of the classification they never became eligible to be recorded in the banner roll of the sanatorium.

The commonest classification of the stages of the disease for the past few years has been *Incipient, Moderately Advanced,* and *Advanced* (or *Far Advanced*); and for results *Apparently Cured, Arrested, Improved,* and *Not Improved.*

In discussing a subject like this a great deal depends on the precise meaning we attach to the word "cured" in this connection. When a person recovers from some diseases, he is in practically just as good condition as before he was sick, and has no further occasion to take anxious thought about the matter in relation to those particular affections. But when he has pulmonary tuberculosis, and it is not immediately fatal, several endings are common, depending largely on the amount of his disease and of his special power of resistance to it, the way it is handled, and on other factors. Some healthy people fortunately have so much lack of susceptibility to tuberculosis or a so-called immunity, either natural or acquired, that they are never touched by it in the slightest degree, in spite of exposure to contagion, and in spite of being surrounded by powerful influences favorable to its production. Half the world in this manner has an immunity against scarlet fever. Others come fairly near this high-water mark with only a slight susceptibility to tuberculosis. They are, as it were, struck by bullets which glance off without apparently doing much harm. They often recover spontaneously with a cure which may prove to be permanent, especially if surrounded by favorable influences, whether they are aware of their condition or not. One of the latest theories, which has gained quite a wide acceptance, is that many, if not most, of the common cases of consumption in adult life, really started in early childhood in this way, without attracting much, if any, attention, and then remained latent for years, finally to be aroused into activity under the fostering influence of overwork, bad air, or any other agency which might reduce the patient's vitality. Cases fired up in this way, including mild infections with slight symptoms, those more severe with well-marked evidences, and even some of the more advanced cases with cavities, may ultimately acquire what is practically a condition of perfect health; or they may reach what is often called an economic cure, where they are able to work to a greater

or less extent; or they may drag along for years in a kind of vegetative existence, in various degrees of individualism, where the question of whether it is worth while often intrudes itself. All of this without dying; but only those who reach perfect health should be called "cured."

The question of individual susceptibility and resistance is a very queer one, but yet it explains many things that are otherwise hard to understand. How one person, for instance, who is infected, seems to be completely overwhelmed, in spite of anything that may be done, perhaps from the very beginning; and how another at the other extreme may go free, scarcely knowing that he has been hit; with all grades between. This difference in susceptibility is seen in animals. Some are very easily infected, like monkeys, rabbits, guinea pigs, swine, and cattle; while others show a great resisting power, like dogs, cats, foxes, lions, and tigers. Some races of men, like the indians and negroes, are peculiarly susceptible and fall easy victims to consumption.

All phthisiologists agree that many (perhaps one-quarter or more) of those patients who have been graduated from a sanatorium as "apparently cured," backslide after returning to work, from various causes which will be considered later. This is the reason that they have been called "apparently" cured and not "cured." The adjective added was in the interest of modesty and truth. The backsliding proved either that the cure was apparent and not real, or else that a new and fresh infection had taken place.

It was hoped that this qualifying adjective would so impress the graduates with the precariousness of their condition on leaving, and the danger to them if they neglected to follow out with care the directions for future righteous living, that as little of this backsliding as possible might be expected. But unhappily some probably could not, and some would not, live up to the best light they had. Lately, therefore, many sanatoria have considered it wise to substitute for the phrase "apparently cured" their second-best designation, "arrested." The argument was that if patients on discharge simply considered their disease as arrested, and liable, if they were not careful (especially for two or three

years), to flare up again, the importance of hygienic living would be more emphasized.

Which ever way you put it, the practical lesson remains that after discharge from a tuberculosis sanatorium with permission to work, the patient must consider himself constantly on probation, as it were, for at least two or three years, and to a lesser degree for a much longer time. The same principle holds good, of course, if the patient has been "cured" by sanatorium methods outside of a sanatorium. If the word "cure" is used in this disease, it must be restricted to the definition applicable only to tuberculosis. Speaking roughly, then, as no absolute accuracy can be attained, statistics from a large number of sanatoria show that of the incipient, the most favorable class of cases, perhaps as an average from one-half to three-quarters on discharge are reported as apparently cured or arrested, and supposedly able to go to work. If then, roughly, from one-half to three-quarters of *these* stand the strain and remain well without backsliding after a probation of two or three or four years, we have not more than half of these original incipients booked for the ultimate cure, which of course is the only cure to be really considered, as it hardly counts to get folks well if they can not remain well. If the probationary period were extended, it must be admitted that the percentage of ultimate cures would be somewhat still further reduced.

If we inquire into the results of treatment of the moderately advanced cases, the percentages naturally are a great deal lower, and the advanced or far advanced cases show an exceedingly small proportion of cures, so that if we had only the latter class to deal with, we should feel pretty near being utterly discouraged.

Speaking very roughly then, with not more than one-half of the incipient or best grade of consumption cases ultimately cured; with a very much smaller proportion of the moderately advanced cases ultimately cured, and with very few indeed of the far advanced, the picture is not as bright as it is sometimes painted. Shall we, therefore, get discouraged? By no means. For in contrast to the results of fifty years ago, what success we have now is almost phenomenal, and the only way to achieve greater suc-

cess is to ferret out as patiently as possible present mistakes and to try to eliminate them. We are encouraged in this hope by the fact that in properly selected cases, where there is sufficient intelligence, education, will power, common sense and financial support, our results are already far better than those just given. It behooves us then to inquire into some of the reasons why not more cases are arrested while under sanatorium treatment, and also why, after they have been arrested, so many of them backslide when they again go out into the big world.

In the *first* place, as has been many times said, too often the diagnosis of the disease before the patient begins treatment has not been made early enough. The old comparison of the difficulty of putting out a large conflagration being so much greater than putting out a small, just-beginning fire, although trite, still holds good. Some improvement in this direction has already been made, but much remains to be done. Physicians are partly at fault, but more blame should be attached to patients, partly on account of ignorance of the first symptoms, which ignorance should be corrected by public education; and partly because, when they do know, they often resolutely refuse to accept the situation or to take the necessary steps. Early cases are arrested very much more quickly and surely. Although our Rutland Sanatorium has generally been specially reserved for incipient cases, yet such are apt to be in the minority there, simply because they do not go. Often only one-third of the patients there are incipient.

Secondly, the stay of patients in the sanatorium is, as a rule, far too short. It now averages about six months. This may be long enough for a few, but not for most. The reason for the short time is at least two-fold; partly because the patient too soon thinks he is all right, and is in a hurry to get away, and also because the sanatorium is often glad to have him go, because so many outside patients are insistent to have his vacant place as soon as possible. Accommodations even here in Massachusetts are now so few, that it often takes two months or more after acceptance, before a patient can get in, during which time he is apt to get worse.

After a so-called good case has been under treatment for a comparatively short time, he often looks rosy and plump and apparently well. He says he feels well, perhaps as well as he ever did in his life, and yet he is still a sick man, and would almost surely collapse under the strain of competition in the outside world. This we all recognize as the special danger-period for him, whether in the sanatorium or under private treatment outside. It is often very hard to persuade him to keep on with his treatment. If the patient is outside, the conscientious physician has another difficulty to encounter in apparently seeming anxious (for a consideration, of course), to continue to treat one who looks well and says he feels well, even if he is not well. Another reason for his wanting to leave before he should, and a perfectly natural one, is that stern necessity often seems to compel it. His money is all gone and he needs to go to work, perhaps to support a family. Thus his generous feeling proves his own undoing.

Thirdly, before the patient gives up sanatorium treatment the so-called "rest cure" should be followed by a "work cure," to prepare him for the resumption of his work in the outside world. Too much can not be said in commendation of the wonderful effects of rest in consumption properly applied, and of the judicious regulation and adjustment of rest and exercise. Indeed, those consumptives who egotistically think they "know it all," and who under the mistaken impression that all that is necessary is fresh air and good food, undertake to conduct their own cases, generally with disaster, oftenest fail through lack of knowledge of accurate details about regulating exercise and rest. Healthy people need exercise. Consumptives, especially at first, need rest in generous doses, but the nearer they get to the condition of health, the more exercise they need. Occasionally, to be sure, some become so impressed with the idea of rest as a therapeutic measure, that they want to continue it for the remainder of their lives. They get lazy. These are in the minority, however. But if patients do little or nothing but rest until they leave the sanatorium, and then try to plunge at once into the competition of life, ill results may follow. The idea is now recognized, there-

fore, that an additional period of time should be taken, during which the mind and muscles should be so trained, under careful medical supervision as to fit them for life's work, as well as to cultivate a good general resisting power.

Now, why does the disease relapse after it has become arrested, and the patient has resumed work of one kind or another? For several reasons, the first of which was given by good old Dr. Isaac Watts, in his "Divine and Moral Songs for Children." "Let dogs delight to bark and bite, for God hath made them so"; "Let bears and lions growl and fight, for 'tis their nature to;" and this reason is equally appropriate to the treacherous disease tuberculosis. On this account perhaps a relapse may occasionally be necessary in spite of what anybody can do.

Poverty is another reason. It has been said, "Only the rich can afford to have tuberculosis," and poverty is certainly a great factor in inducing tuberculosis, a hindrance in overcoming it, and especially a big handicap in keeping well after a return to work, although not by any means an insuperable obstacle to permanent recovery. When we think of the homes to which so many have to return, dark, overcrowded, insanitary tenements, with surroundings such as are constantly giving rise to new cases, is it strange that some relapse? Tuberculosis is particularly a house disease and some infected houses, especially in the slums, have claimed victim after victim. Here is an enormous field for private philanthropy, if not for public appropriation, to provide healthy houses, model tenements with roof gardents, and buildings like the Vanderbilt "Home Hospital," 78th St. and John Jay Park, New York. Boards of health should certainly condemn improper buildings, fight the dust and smoke nuisances, supervise lodging houses and compel the sanitation of workshops and factories. Among the pood follow-up work is very important, and the trained visitor to inspect conditions and give advice, and the domestic science caller to teach the proper selection and cooking of food, both systems started by the Boston Association and then turned over to the public authorities, are steps in the right direction.

Improper occupation after discharge is another very effective cause of relapse. And here comes in one rather curious and unexpected fact learned in the school of experience. After an extended trial we find that the majority of patients get along much better if they go back to their former employment, provided they are not distinctly dangerous ones, than if they take up something new, which is theoretically better suited for their condition. From the observation of the remarkable effect of fresh air in the recovery from the disease, the inference was natural that to stay well the same should be continued, and that the work, if formerly sedentary and indoors, should be changed to outdoors. But the practical fact remains that the number of suitable out-door occupations open to graduates is very small, that the extra exposure and unusual strain are apt to be too much for them, that the income for one not especially trained to the new work is also small, and that this smaller income will buy less food and other comforts and necessities of life. These and similar considerations more than overbalance the acknowledged superiority of a longer period in the twenty-four hours in the fresh air. We all find also that the utilization of the worker's off-duty is more important than that of the on-duty time, and that if the work in a well-ventilated office or shop is suited to his capacity and strength, he will generally get along well, if he has a sufficient number of hours of sleep in the open air, and is not prodigal in the expenditure of vital force in his recreation time. If he is skilled in his former work, he can earn more than in something untried. Formerly the commonest advice was to go on a farm and work, or drive a livery team, or to deliver groceries and provisions or something of that kind. Generally the giver of this advice knew as little practically about what was involved in this work as the receiver; but on trial, if the job was obtainable, as occasionally happened, the difficulties sometimes loomed up like a great crowd.

Among different occupations recommended, none has received stronger support than farming, and yet on account of the hard physical work, the long hours of toil and the exposure, few city people could stand the strain as farm hands. The farmer himself needs the work done, has generally too little help, and can not

afford to coddle or favor the worker. If the worker tries to run the farm himself without previous experience, he makes a financial failure of it. Besides, the average city man has no taste for farm work and really dislikes it. Small poultry work is better.

The only real good way to utilize a farm for these people is to have it connected with a sanatorium in the form of a farm colony, and to have graduates or those not far from graduation work on it under medical supervision, each as many hours per day as is good for him, or not at all some days, if his physical condition demands a rest. This will not be a financial success, but will confer a benefit on the workers, and will test their endurance and prepare them for other work. For years at Rutland it has been the policy to employ under medical supervision on diminished pay a certain number of graduates, who had not become tough enough to engage in outside competition, to work about the institution, mostly inside with open windows and for them it worked very well. If members of the Legislative Committee were amazed at this large force of workers on the pay roll, the fact was explained as for the benefit and further treatment (work cure) of the patient, which might prevent relapses.

Another very effective influence in favoring relapses is the spirit of *over-confidence* begotten in some of those who have finished the treatment and have gone to work again, apparently believing that they are "cured" so thoroughly, that nothing could ever happen to them again. This spirit tempts them to do all sorts of things antagonistic to their welfare, recklessly to squander their recently repaired physical assets by overwork, too much play and even by dissipation, relaxing also in the principles taught them of the hygienic life. They consider that they are cured in the sense of a cure of measles or of scarlet fever or of typhoid, with no prospect of a return of their disease, and this opinion they hold in spite of proper explanation. If the word "arrested" will make them more careful than the word "apparently cured," by all means let us use it. The great fact for them to remember is that the sanatorium treatment does not "end all," but merely starts them on the road to health, and that they can not afford to neglect the hygienic life, and should call in extra help if things

do not go just right. For this reason we may call attention to the fact that it has not infrequently happened that persons discharged as unarrested have sometimes been more successful in reaching the ultimate cure than the class now under consideration; because they knew they were not cured, and therefore were prepared to continue the fight indefinitely. So some physicians even go so far as to advise all graduates to say, not "I had tuberculosis, and am now cured," but rather, "I have tuberculosis." Human nature is such that it is doubtful if a man's whole conduct could be completely changed by a slight difference in phraseology. What he needs, after proper instruction, is to have his will power, his moral fiber, his whole character strengthened. With these and other important modifications we look to the future for greater successes than in the past.—*Medical Record.*

Extracts from Home and Foreign Journals.

SURGICAL

Cause and Cure of Cancer.

From the laboratory point of view, Lazarus-Barlow tries to show how radiobiologic research indicates radium and other radiations as a very special agency wherewith to treat cancer; how certain disadvantages are unavoidable and other avoidable with our present knowledge; how, and in what directions, research should be conducted to turn present failure into future success. The ideal he holds is that in radium and other radiations we hold the solution of the cure of cancer. In a sufficient dose radium and other radiations are capable of killing every type of cell met with in cancer.

The action of radiations on cells, he claims, is selective, or conversely; all varieties of cells are not equally vulnerable to radiations. There is some evidence that all active immunity is produced as the result of acting on malignant cells with radium. Lazarus-Barlow insists that microscopic examination by a competent morbid histiologist should be made of every case subjected to radium treatment. The amount of radium in use should be verified periodically by a competent physicist. It should be recognized that the metabolic processes of every patient after exposure to a considerable dose of radium are profoundly modified, at least for a time. Treatment with radium should not follow immediately on operation. If radium treatment of a malignant new growth be decided on, such treatment should not be preceded by complete removal of the main part of the growth.

Finally, Lazarus-Barlow states that, whatever treatment may be the case in the future, for the present radium treatment of malignant disease should be confined to those cases for which modern surgery can not offer a fair prospect by operation. But

this is the furthest that one can go. At present, where modern surgical operation can offer a fair prospect of satisfactory result, the knife must be recommended in preference to every other agent, and this is as true for recurrences as for the primary disease.—*The Journ. of the Amr. Med. Asso.*

Effect of "606" on the Eye.

Seven cases of serious eye complications follow its use. P. S. McAdams, in summing up the effects of "606" on the eye, says that no case of injury to the healthy eye has been proved. The consensus is that it is innocuous to the healthy eye. A favorable result is to be expected from the salvarsan in syphilitic disease of the iris, the choroid, retina, and optic nerve in syphilitic paralysis of the ocular muscles, and sometimes in interstitial keratitis. It is an effective specific remedy in syphilis of the eye especially indicated when speedy aid is urgent. It is not a panacea for ocular syphilis and can not entirely replace other preparations. No benefit is produced in simple, primary optic atrophy.—*The "Red Back" Texas Medical Journal.*

Actions of Chloroform and Ether on the Blood Pressure.

H. P. Failrie thus sums up effects of the two anesthetics on blood pressure: A fall of pressure is produced throughout the administration of chloroform. With the establishment of full anesthesia this fall amounts to at least 10 mm. and sometimes considerably more; along with this the pulse beats slower and a varying degree of pallor is present. Surgical shock during chloroform anesthesia produces a slight further fall of pressure. With the withdrawal of these two depressants—chloroform and shock—the blood pressure exhibits a tendency to rise rapidly and very often soon reaches a point a few mm. below the patient's normal. Little alteration of blood pressure is produced by ether. It may cause a rise, it may maintain a constant level, or it may cause a fall. It causes more rapid and more forcible cardiac action, with dilatation of the smaller vessels, as evidenced by flushing; the blood

pressure level remains almost constant. With intercurrent shock a considerable fall of pressure takes place, a fall almost equal to the combined effects of chloroform and shock. Recovery from shock is slow, some time elapsing before the blood pressure approaches the normal. Frairlie's summary is based in part on observations made on animals, but mainly on his experiences of three years' use of the drugs in man. It is not generally appreciated that ether thus may lead to an increased danger in the face of surgical shock, and he quotes from several prominent authorities to substantiate this belief. Chloroform would thus seem to be the anesthetic of choice for cases with severe shock, but where shock is absent or likely to be slight, ether should be employed owing to its greater margin of safety.—*Exchange.*

Note on a Simple Method for Diminishing Chloroform and Ether Sickness.

The *British Medical Journal* of December 6, 1913, contains an article by Renton on this topic. Having observed that cases of gastroenterostomy treated in the Fowler position had very little postanesthetic sickness, Renton has for the last six years raised the upper end of the patient's bed on blocks twelve inches high in all cases after chloroform or ether anesthesia. This he continues for twenty-four or thirty-six hours.

This plan has been followed by a great diminution in the amount of sickness. By the old method in which patients were kept lying in bed with the head very low, the amount of sickness was very great in many cases. The staff nurses at the Western Infirmary and nurses in private confirm the statement that the improvement since the upper ends of beds were systematically elevated has been very great, and in consequence the suffering to patients and the labor to nurses are very much less.

The reason that this method is satisfactory is purely mechanical, as it is more difficult to be sick in an elevated position than with the head low. Certain patients are, of course, very sensitive, but even when on previous occasions patients report that they suffered for days with sickness, when in the elevated position the sickness very soon passed off.—*The Therapeutic Gazette.*

Perforation of the Appendix by Pin, Without Symptoms.

The second case I have is one of a pin in the appendix. I have, purposely, not opened this appendix so that nobody can say I stuck the pin in. The pin was giving no symptoms whatsoever. The case was one of strangulated umbilical hernia. I ran across the pin in doing the operation. The woman died. It was necessary to resect about seven feet of the bowel altogether, but the appendix pin had been giving no symptoms whatsoever.—*Long Island Medical Journal.*

Intestinal Obstruction from Abscesses Following Appendectomy. Operation (Evacuation Through Bowel).

The third case I have to report this evening is that of a child five years of age, a little girl who was taken with ordinary acute appendicitis. It was the first attack. At operation, performed during the night, a single drop of pus was found at the base of the appendix. I left a drain in. The child did very nicely for the first three days. Then I removed the drain. I think that is the important part of the case. I took the drain out, had to use quite a little force to do it, and I probably opened up a new area of infection. She developed a large abscess on the left side, and obstruction symptoms again, and her condition became so severe that fecal vomiting was almost continuous, lasting about eight hours. After consultation I was prevailed upon not to open the abdomen. I thought I should do so, but yielded to the judgment of others and did not do so. Then the father begged me to do something, and I suggested the use of the sigmoidoscope. I used the sigmoidoscope and was able to see the bowel collapsed and held partly closed, evidently by pressure on the outside. The child was in such condition that I was willing to take the risk, and I took a piece of wire, which I had at home, and sterilized it, and put it over the sigmoidoscope and opened a hole in the bowel. That is, of course, not good surgery, but it worked in this case, and the fecal vomiting stopped, and the child is well today.—*Long Island Medical Journal.*

MEDICAL

Dysentery Treated by Hydrochloride of Emetin.

Juan Carlos Labat, La Semana Medica, August 4, 1913, reports the use of emetin in a case of dysentery which had been lasting 7 months and which had defied all treatment. During the last five months the patient had 20 bowel movements a day—blood and mucus—and was greatly emaciated. Then 0.05 grammes of emetin were injected. The day following, the patient had 9 movements. The next day the same amount of the drug was given and the movements reduced to five. The injections were continued every other day and a complete reëstablishment of health resulted.—*Buffalo Medical Journal.*

Can Psychic Depression Cause Death?

This question has been put to us recently in several ways, as: Can a person die of a nervous breakdown—referring to a case of which we have no personal knowledge, and described as apparently in good health a few days before death and with no organic disease claimed by attending physicians. Did ———— die because he was discouraged—referring to a case in which different attendants made such discrepant diagnoses, along lines with which we have no special experience that no conclusion could be drawn, although a comparatively recent observation of the case, professionally, along other lines, led to some scepticism as to the existence of serious organic disease. Can a person die of a broken heart? etc.

There is no doubt but that sudden and violent psychic strain may cause death, either through inhibition of cardiac and, possibly, other vital functions, or through the production of apoplexies, etc. Neither can it be questioned that the mental state may turn the balance one way, or the other in serious acute illness; nor that it may depress various functions so that the potential life of the individual is shortened and the resistance to various dis-

eases lessened to such a degree that a given organic disease is considerably increased in mortality.

But, without adequate physical cause of death, can it be determined by general nervous depression, such as grief, discouragement, shame, etc.? This is a prevalent popular notion. It is of course, subject to corroboration by the post hoc propter hoc argument. Is it correct or incorrect? It occurs to us that this is a question deserving serious and scientific consideration and we welcome discussion.—*Buffalo Medical Journal.*

Stomach Complications with Gallstones.

Aldor recalls that nearly eight years ago he published his experiences in about a hundred cases of cholelithiasis without jaundice in over half of which he had found signs of a catarrhal affection in the small or large intestine or both. His examination of hundreds of similar cases since has confirmed the frequency of chronic intestinal catarrh with cholelithiasis, suggesting some causal connection between them. He here reports almost similar findings in respect to the stomach. Normal conditions of gastric secretion were found in only 18 per cent. of the 82 patients! hyperacidity in 39 per cent; subnormal or no acidity in 42-6 per cent. The latter condition seems to be the result of the severe affection of the gall-bladder abolishing its function. The loss of gall-bladder functioning possibly modifies the composition of the bile as well as its mode of outflow. Bile in the gall-bladder is nearly ten times more concentrated than bile which drips directly from the liver into the intestine.

For these and other reasons enumerated, it seems evident that the gall-bladder is more than a mere reservoir for the bile, and the loss of it often entails severe and irreparable disturbance in gastric secretion. In a certain proportion of other gall-stone cases, chronic gastritis is responsible for the disturbance in gastric secretion. In this class of cases the symptoms on the part of the stomach keep up more or less most of the time, while in the other group they subside more or less during the intervals between the attacks of gall-stone trouble.

It is very important in treatment to discriminate between the cases with catarrhal affections and those without, as the measures appropriate in one may be directly injurious in the other. When the subacidity results from loss of gall-bladder functioning, hydrochloric acid is indicated, 25 or 30 drops in water half an hour after meals. This does not supply the natural amounts of hydrochloric acid, but it is enough to give the stimulus for pancreas secretion. When it is a question of chronic gastritis, with large amounts of mucus, rinsing out the fasting stomach has often had a surprisingly favorable action. Discovery of impairment of the gastric secretion with nothing else to indicate chronic gastritis, testifies to severe changes in the biliary apparatus, especially in the gall-bladder, and thus betokens a graver prognosis from this point of view than the gastritis cases.—*The Journal of the American Medical Association.*

Direct Sunlight in Treatment of Tuberculous Fistula.

This long article is by an assistant at Rollier's sanatoriums in Switzerland and an assistant at Bier's surgical clinic at Berlin. Sixteen severe cases are reported in detail as typical specimens of what can be accomplished by months of sunlight treatment in old fistulous processes. Rollier reported last year a complete cure in 248 out of 331 cases of open tuberculosis. In the 16 cases reported the 4 in which the soft parts alone were involved have healed entirely, as also 8 of the bone cases, but in 4 there is still a minute active process in the depths so that the fistula still persists, although materially reduced in size. Fistulas in soft parts heal in four or seven months, but when a bone or joint process is the cause of the fistula a year is usually necessary, sometimes less, but oftener still longer. Kirsch and Gratz say that even under a brief course of heliotherapy the fistulas show a marked reaction, including those that have previously resisted all conservative and surgical measures. The sunlight does not cause encapsulation of the fungous masses, but a breaking down of the disease tissue and its substitution by cicatricial tissue.—*The Journal of the American Medical Association.*

The Subcutaneous Administration of Oxygen as a Therapeutic Measure.

Dr. John McCrae of Philadelphia stated that he had used oxygen in this way for the last two or three months and believed it was the rational method of administering it, and properly placed, it was useful. He had had occasion to employ it in a surgical case which had a severe operation. The patient looked as though he might die in a short time. His respiration was 60; he had extreme edema of the lungs, extreme pallor, profuse perspiration, and signs of impending death. With repeated injections of oxygen the man recovered. He had used oxygen in thirty cases and believed it should be a part of the armamentarium of the surgical operating room.—*Medical Record.*

Quinine and Rabies.

The Pasteur treatment of rabies has certain weak points. While effective as a preventive it must be employed before the infective agent has had opportunity to develop, and it requires some days before protection can occur in the inoculated person. If the patient has already developed symptoms of the disease nothing is gained by using Pasteur's method. Inasmuch as rabies is an infectious disease, a living agent of some description must be present. By many observers this is thought to be protozoan in character. With this as a basis, Moon tried out the action of quinine on dogs that were inoculated with rabid brain material and were allowed to develop active symptoms of rabies. Quinine was then administered internally in large doses, equivalent to from twelve to eighteen grammes daily for an average man. The medication was pushed to the limit to secure the full physiological effect, one bordering on the toxic. As a result three untreated animals died, while the three treated ones recovered. Report also comes that this method has been employed successfully in one case of a human being.—*Medical Times.*

Intraspinal Injections of Magnesium Sulphate in the Treatment of Chorea.

This method of treatment which is now generally referred to as Marinesco's method was first suggested by the experimental and clinical work of Meltzer and Auer of New York. These investigators had shown that magnesium sulphate in intravenous, subcutaneous, and intraspinal injections, and in local applications to nerve trunks, inhibits the two chief properties of nerve tissue, namely, its excitability and conductivity. On the basis of their experimental work, Meltzer and Huer had suggested that the subarachnoid injections of magnesium sulphate might be employed with advantage as a substitute for cocaine in producing regional anesthesia. The first important therapeutic application of this method was in the treatment of tetanus. At the present time favorable results from this mode of treatment are being reported from various clinics abroad. Marinesco demonstrated the good effects of magnesium sulphate when injected into the subarachnoid space in sciatica and in the gastric crises and the lightning pains of tabes, and later applied this method in the treatment of Sydenham's chorea. In 1908 he reported four cases of the latter disease successfully treated by means of the intraspinal injections of magnesium sulphate. Since that time similarly favorable results have been reported by Baduel, Rocaz and others.

The most recent contribution to this subject is that presented by Augusto Natali in the *Rivista Ospedaliera,* March 31, 1914. He employed the socalled Marinesco method in the treatment of eight severe cases of chorea, one of which was a chronic case in an adult. The technique consisted in the performance of lumbar puncture in the usual manner, the evacuation of a certain amount of the cerebrospinal fluid, and the injection of a solution of magnesium sulphate. The strength of the latter varied from 7 to 25 per cent, and the amount injected consisted of 1 cubic centimeter for every 25 pounds of body weight. Of the author's eight cases, following the first injection, there was a rapid improvement in two cases, an appreciable improvement in two cases, and a slow improvement in two others. No benefit was derived in the two

remaining cases which included one instance of the chronic type of the disease. The importance of these results is revealed by the fact that all of the cases were severe ones, and had failed to respond to the usual methods of treatment. Natali points out that it is of advantage to follow the intraspinal treatment by means of a brief course of arsenical medication. As regards the rationale of the action of the magnesium sulphate Natali is probably correct in stating that this drug acts not as a specific but merely as a symptomatic remedy, diminishing the excitability of the nerve centers.—*Medical Record.*

OBSTETRICAL

Methods of Treatment of Puerperal Infections Which Have Given Improved Results.

One hundred and twenty-five cases of infection following abortion after the second month of delivery have been treated in a conservative manner as far as the inside of the uterus is concerned, except when firm contraction of the uterus was not present, or when it could not be secured by the use of strychnine or ergot, or when the uterine cavity was firmly packed with iodoform gauze. This was done for the purpose of securing firm contraction if the uterus had not been emptied to facilitate the expulsion of its contents. The satisfactory use of magnesium sulphate locally in erysipelas led me to try it in the treatment of puerperal infection. At first it was given in a 1 per cent solution of saline, about 30 grains at a time. Later it was learned that much greater quantities could be given safely if given slowly. Dr. Harrar of New York has used 250 grains without any alarming effects. Distilled water has been used instead of saline, and there has been fewer chills following its administration. There have been no accidents from its use, and I have given it more than 150 times. It is not bactericidal, but the tissues are stimulated to greater resistance.

The most rational treatment in the beginning of every case of sepsis starting within the uterus is based on a keen appreciation of the pathology. The most important indication is to secure firm contraction of the uterus. The second factor is a healthy respect for Nature's protected zone, in this way limiting the spread of the infection. Good drainage is also an important factor and is secured by placing the patient in a sitting position. Active general measures, such as attention to diet, elimination and fresh air are the important factors in the treatment of puerperal infection.—*The Journal of the American Medical Association.*

Ruptured Ectopic.

Mrs. M., aged twenty-three, widow, was seen in consultation with Dr. Gaston. She gave the following history: Four days previously she had severe pains in the abdomen and vomited several times, the pain continuing until relieved by morphia. During the present attack the temperature ranged between 99 and 101 degrees; the pulse rate, however, remained below 90 beats per minute.

The patient was very obese, and although seemingly quite ill, was reluctant to answer the few questions which I asked her.

There was general tenderness of the abdomen, a little more marked on the right side opposite the umbilicus. The muscles were mildly contracted and the vomiting had ceased. Calomel, salts and a compound enema were diligently striving to produce a bowel movement, and the unseeming reticence of the patient was attributed to this cause.

An opinion was ventured that we were dealing with an acute attack of appendicitis, the fury of which was partly spent; furthermore, immediate operation, though desirable, was not imperative. The temperature and pulse rate at the time of my visit, the fifth day of the disease, were 99.4 and 86 respectively.

Forty-eight hours later her physician called me on the phone and said the patient had a severe pain, followed by collapse; the pulse was rapid, very weak, the patient ashen pale, lips and finger tips were of a bluish color. A diagnosis of ruptured ectopic was

made over the wire and advice given to use large doses of morphia hypodermically, and keep the patient at absolute rest.

I saw the patient a few hours later, at which time she was exceedingly pale. The pulse rate could not be counted by pressure upon the radial artery with the finger.

By the following morning the patient had so far recovered that she was removed to the Good Samaritan Hospital, where an operation confirmed the diagnosis.

Our interne exposed the median basilic vein during the preliminary stage of the operation, and as soon as a clamp was placed upon the right broad ligament began the intra-venous introduction of a decinormal salt solution. The entire amount introduced thus was 1,500 c.c. The rapidity with which the patient's condition improved on beginning the use of the saline was truly remarkable.

The operation was done forty-eight hours after the alrming rupture. The patient was considered by my anesthetist as a hazardous risk from his end of the table, and at his suggestion the salt solution was employed. The anesthetic post-operative recovery was smooth. However, the rosy color which the intravenous injection induced, and with which she left the table, gave way to a ghastly pallor, which was accompanied by extreme weariness, scanty urine, dry skin and an anemic bruit. This condition persisted, despite saline per rectum, copious draughts of water and liberal diet, for many days.

The patient had lost her bruit and long train of symptoms due to loss of blood, and is now ready to go home. This woman lost more blood than any other person whom we have seen, with recovery following ruptured ectopic.—*Cincinnati Med. News.*

An Aid in Obstetrics.

Dr. J. R. Smith (*Med. World*) gives one hyoscine-morphine-cactine (Abbott) tablet in nearly all cases at the beginning of the second stage of labor, or after pains begin to come strong and regular, to save suffering, stimulate and strengthen the pains, and make them come a little farther apart toward the last, thus allowing more rest to the patient and greater dilatation of the

soft parts. He has never had any unpleasant after effects from its use in hundreds of cases. If the forceps and chloroform are needed later on, a point is gained by having given the H-M-C, as it lessons the danger in giving chloroform, and not nearly so much is required. In two cases at a long distance in the country when the chloroform gave out and time meant a life, he used 3 H-M-Cs, completely anesthetizing the patient, as a craniotomy was necessary.—*Critic and Guide.*

Pituitrin Therapy.

In the *Albany Medical Annals* for December, 1913, Albrecht gives us these conclusions:

1. Pituitrin is a powerful stimulant to uterine contraction in labor, the latter nevertheless retaining its physiological character.
2. Its best action is in the second stage, when it is always harmless.
3. It is of value in the first stage with sufficient dilatation of cervix and no obstruction, provided it is given in small doses, otherwise tetanus uteri may occur.
4. Fetal heart-beats may become slowed, but unless labor is too prolonged they regain their normal character.
5. The average dose is one cubic centimeter and is usually sufficient.
6. Repetition of dose is always as effectual as the first admintration.
7. Effect begins three to ten minutes after use and usually lasts an hour.
8. Postpartum conditions are normal.
9. As noted previously, the contraindications are but few.
10. It is of value as a cardiovascular stimulant.
11. It shows beneficial results in amenorrhea, menorrhagia, and allied conditions.
12. It will undoubtedly be found valuable in many other conditions, when the relations of the pituitary secretion to the rest of the system receive more study.

Galvanism for Dysmenorrhea.

The large proportion of cases of dysmenorrhea can be readily understood, if each menstruation is to be considered as a miniature labor. (Samuel Wyllis Bandler, *Archives of Diagnosis,* January, 1914). We have the outflow of blood, we have the contraction of the uterus. In labor, we have varying degrees of pain, depending much on the individual ability to stand pain well, or poorly. The same conditions hold good in many of the cases of dysmenorrhea; there is a hypersensitive uterus, or the patient is constitutionally of the hypersensitive type.

To perform a surgical dilation of the cervix and to make this dilation more or less permanent by the use of an intracervical stem or by a cutting operation without first knowing that the cervix is the main offender, leads often to a disagreeable disappointment.

The only painless and non-injurious method of dilating a cervix in office practice, which I have found to be advisable is that with the aid of the galvanic electric current. Aluminum sounds of various diameters are used, always of a caliber smaller than the size which might be used if a little force were applied. A large plate is applied to the abdomen, or under the sacral region, the negative pole being the intra-uterine one, and a current of from 5 to 10 milliamperes is used for a period of 5 to 15 minutes. The action of the negative pole within the cervix causes a relaxation of the fibers with a resultant dilatation of the canal so that the intrauterine sound slips out, as if a grasping hand had opened. At the same sitting, or at the next application, the first electrode may be changed for one somewhat larger, and this may be repeated as judgment dictates, always drawing the electrode out as soon as the patient experiences pain or discomfort. The negative pole within the cervix produces, especially if a white or yellow secretion be present, an oxidation of the secretion with the resultant production of a bubbling composition such as H_2O_2 produces with a purulent discharge. If the electrode fits too closely in the cervix, and there is no egress for this product, there is an increase within the uterine cavity, and in the cervix and

pain results. If 1, 2 or 3 treatments on successive days before the onset of menstruation and its associated pain, result in a painless menstrual flow, it is a fairly satisfactory proof that the cervix plays an important part in the production of pain in this particular individual.—*Medical Review of Reviews.*

Editorial

PUBLISHER'S NOTICE—The Journal is published in monthly numbers of 48 pages at $1.00 a year, to be always paid in advance.

All bills for advertisements to be paid quarterly, after the first insertion of the quarter.

Business communications, remittances by mail, either by money order, draft, or registered letter, should be addressed to the Business manager, C. S. Briggs, M. D. corner Summer and Union Streets, Nashville, Tenn.

All communications for the Journal, books for review, exchanges, etc., should be addressed to the Editor.

MEDICAL EDUCATION.

We wish to call the attention of our readers to the fact that next fall the new entrance requirements for the medical department of Vanderbilt University go into effect and ask their aid in helping to disseminate this knowledge in order that as few men as possible will make the trip to Nashville with a view of commencing the study of medicine, only to find out that they are not eligible. We wish also to remind our readers that the term commences in the latter part of September and continues until the middle of June.

Since these facts mean that at least five years—one in the literary department of some reputable university and four in the medical department—must be devoted to hard study before graduation, one should consider carefully before advising and boy who is not a lover of study and science, to enter upon the study of medicine. Another thing to consider is the financial side. Heretofore a boy could often make enough between May and October to carry him through the next term. At present, however, with less than three months' vacation it will be difficult for anyone who is working his way through college, to accumulate anything like the sum necessary to meet his expenses during the following session in college. Furthermore, it is only a question of a few years before a year's hospital work will be required before a graduate of a medical school can take

the State Board examination. Such a change may occur in the next few years. So any prospective medical student should be warned of this probability. Whether these changes will mean fewer doctors in the future we are not prepared to say. That the graduates as a whole, however, will be better qualified to practice medicine goes without saying. W. T. B.

The Food and Drugs Act of Tennessee.

The Food and Drugs Act of this State prohibits adding to the food and drugs consumed in the State deleterious ingredients, and likewise enforces the sale of such materials for what they are. In other words, it prevents the addition to them not only of materials which are harmful, but of those which are useless, and the addition of which unduly cheapens the product without notice to the consumer. It conserves public health by insuring the purity of foods, conserves public morality by making manufacturers tell the truth about their goods, and helps to keep down the cost of living by insuring to all foods the nutritive effect which properly belongs to them. The consumer's pocket is protected by it because it prevents the sale of adulterated stuff at the price of pure goods. Although not its primary object, it has afforded to the honest merchant the greatest protection of any recent legislation, because it has brought out from under cover the rottenness of dishonest goods, so that merchants now know the exact character of goods sold by competitors. In this way, it has given stability to the food trades, preventing illegitimate competition and minimizing the effects of trickery. Finally, it has been one of the most potent of the legislative agencies invoked in that fight for justice to the common people and for better conditions of life, which has attained such considerable dimensions in the last decade, but in which so much more still remains to be done.

Various phases of the enforcement of this law will be treated in detail, such as a consideration of the individual foods and drugs how they are made, and how they are adulterated.—*Lucius P. Brown, State Food and Drug Commissioner.*

Post-Graduate Work in Asia.

Though the writer has taken post-graduate work in Europe on three different times he was somewhat surprised when nearing the chloroform age to discover that he was doing some very valuable study along time-post graduate, in Asia. In Palestine I had the run of a large leper hospital. Leprosy had not been among the cases treated by me. While in India there were reported from five to six thousand cases of bubonic plague a week in that country. Asiatic cholera and smallpox were also epidemic in many parts of the country. In fact in the city of Bangalore, when I visited it in January, 1914, all these diseases were epidemic, and there was hydrophobia also there, a number of soldiers having been bitten by a pet monkey. At Tokyo, Japan, there was an epidemic of typhus fever, fleck typhus, as they call it there. Three thousand cases were admitted to the Infectious Hospital in Tokyo during the months of March, April and May, 1914. Having been a student at Berlin with the well known bacteriologist, Kitasato, of Tokyo, and having met him at the Congress for the Arts and Sciences at St. Louis during the Exposition there, I called upon him. He said he remembered me, which I doubt, and treated me very kindly. He gave me cards which gave me entre to medical Japan. I proceeded to the Hospital for Infectious Diseases in Tokyo and was shown through it and saw a large number of cases of typhus in all stages. There were but few in the very early stages, but some, as the epidemic is fast disappearing. None of these cities seemed alarmed about the epidemics in their borders, nor did the outside world take special precautions against them. This was perhaps due to the Taisha Exposition in Tokyo and to the Dowager Empress' funeral, which was just about to occur. Besides this, I met a number of young medical men who, in hospitals and in private practice were doing more work and more good in Asia, seeing more and learning more than they would do in a long time at home. The ship's young surgeon on the steamer on which I crossed the Pacific had eighty cases of hookworm disease on board. They were Chinese steerage passengers and would not be allowed to land unless cured on the

way. The Pacific Mail paid him, in additional to his salary, $5 for each case of hookworm disease he cured. It is said that the Chinese make a practice of getting on a Pacific Mail steamer bound for America to get cured of hookworm disease free. This young ship surgeon, just two years out of college, would wait a long time before he would have 80 cases of that disease on hand at once in private practice. I would recommend Asia as a post-graduate school.—*E. S. McK.*

United States Civil Service Examination.

Assistant Epidemiologist, Male ($2,000-$2,500). July 6, 1914.

The United States Civil Service Commission announces an open competitive examination for assistant epidemiologist, for men only. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the Public-Health Service, at salaries ranging from $2,000 to $2,500 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of this position will be to conduct laboratory studies of disease, to make epidemiological surveys to determine the prevalence and causation of epidemics, and to recommend measures to prevent and control outbreaks of disease.

It is desired to secure persons thoroughly competent in the various branches of sanitary bacteriology, and especially in isolating the typhoid bacillus from infected persons and materials.

Competitors will not be assembled for examination, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects.	*Weights.*
1. General education and medical training	25
2. Laboratory experience	30

3.	Experience in epidemiological work	35
4.	Publications or thesis	10
	Total	100

An educational training equivalent to that required for graduation from a medical school or college of recognized standing, and at least three years' experience in epidemiological work under Federal, State, or local authorities, and experience in laboratory technic, especially in regard to typhoid fever, are prerequisites for consideration for this position.

If a thesis is submitted under subject 4 it must present the results of original research work in some sanitary subject.

Statements as to education and experience are accepted subject to verification.

Applicants must have reached their twenty-third but not their fortieth birthday on the date of the examination.

This examination is open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for Form 304, and special form, stating the title of the examination for which the forms are desired, to the United States Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Postoffice, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; Customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed, excluding the medical certificate, and filed with the Commission at Washington, with the material required, prior to the hour of closing business on July 6, 1914. The exact title of the examination as given at the head of this announcement should be stated in the application form.

Issued May 25, 1914.

Reviews and Book Notices

"Brain and Spinal Cord"—A Manual for the Study of the Morphology and Fibretracts of the Central Nervous System. By Dr. Med. Emil Villiger, Privatdozent in Neurology and Neuro-pathology in the University of Basel. Translated by George A. Piersol, M.D., Sc.D., Professor of Anatomy in the University of Pennsylvania. From the Third German Edition, with 232 Illustrations. Price $4. J. B. Lippincott, Co.

We acknowledge with thanks to the publishers the receipt of the third edition of this excellent manual. For thoroughness, clearness and conciseness it has few equals. It is conveniently divided into three parts. Part I deals with morphology; in Part II the fibre-tracts are described, while in Part III there are illustrations of the entire brain stem made by the author himself from microscopic sections, serially made. The book is so thoroughly illustrated that it is easy to understand the text without having sections of the brain at hand, which should make the book popular with the general practitioner. We take great pleasure in recommending this work to the profession and trust that its popularity will be in proportion to its merits.—W. T. B.

Genito-Urinary Surgery"—Surgical Diseases and Injuries of the Genito-Urinary Organs. With 27 color and 21 black and white plate and 279 illustrations in the text. 8vo. 790 pages. Price $7. Funk & Wagnalls Co., Publishers, New York.

We are unusually pleased with this excellent and timely text-book on Genito-Urinary Surgery. It is decidedly the best work of recent years on this important branch of surgery. It covers the field completely; it is well arranged throughout and the text is concise, clear and readily followed by the reader. The illustrations form a most attractive feature, the colored plates especially illuminating the text in a most gratifying manner. The work is unusually well balanced, each part being in well-proportioned relation. We feel sure that the work will rapidly become popular as a text-book for students and a reference book for practitioners and in our opinion it will richly deserve all kinds of

success. We have taken great pleasure in looking over this book and tender to author and publishers our heartiest congratulations on having presented a book of such great practical value to the profession.

"Practical Therapeutics"—Including Materia Medica and Prescription Writing, with a Description of the Most Important New and Non-Official Remedies Passed Upon by the Council on Pharmacy and Chemistry of the American Medical Association. By Daniel W. Hoyt, M.D., Formerly in Therapeutics, University of Pennsylvania; Fellow of the College of Physicians; Assistant Physician to the Philadelphia General Hospital. Second Edition. Revised and Rewritten. St. Louis. C. V. Mosby Co., 1914.

This is the second edition, thoroughly revised and rewritten, of an exceedingly practical and valuable text-book. The student will find it of the greatest help in his studies and the practitioner a most convenient reference handbook. A very commendable feature of the work is the arrangement of the text. The reader can, at a glance, get the drug, its physiological action and in most cases specific action on the different organs. The texicology of drugs and treatment and therapeutical medications and contra-indications. Recent progress in every part of the therapeutic field is carefully winnowed and all advances exhaustively noted. The work has a great deal to commend it and will become popular with the profession.

"Progressive Medicine"—A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences; Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; assisted by Leighton F. Apleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia; June 1, 1914; Lea & Febiger, Philadelphia and New York.

This is an unusually attractive number of the well-known quarterly publication. The following are the contents of this volume: Hernia, by William B. Coley, M.D.; Surgery of the Abdomen, Exclusive of Hernia, by John G. Gerster, M.D.; Gynecology, by John G. Clark, M.D.; Diseases of the Blood, Diathetic

and Metabolic Diseases, Diseases of the Thyroid Gland, Spleen, Nutrition and the Lymphatic System, by Alfred Stengel, M.D.; Ophthalmology, by Edward Jackson, M.D.; Index. The publishers are to be congratulated upon the production of such a serial and the editors upon the exceptional character of their work. The contributors to the volumes are all well known as authoritative upon the subjects they represent. We can not do more than urge any practitioner who desires to keep in the van of modern progress to subscribe to this valuable publication.

Publisher's Department

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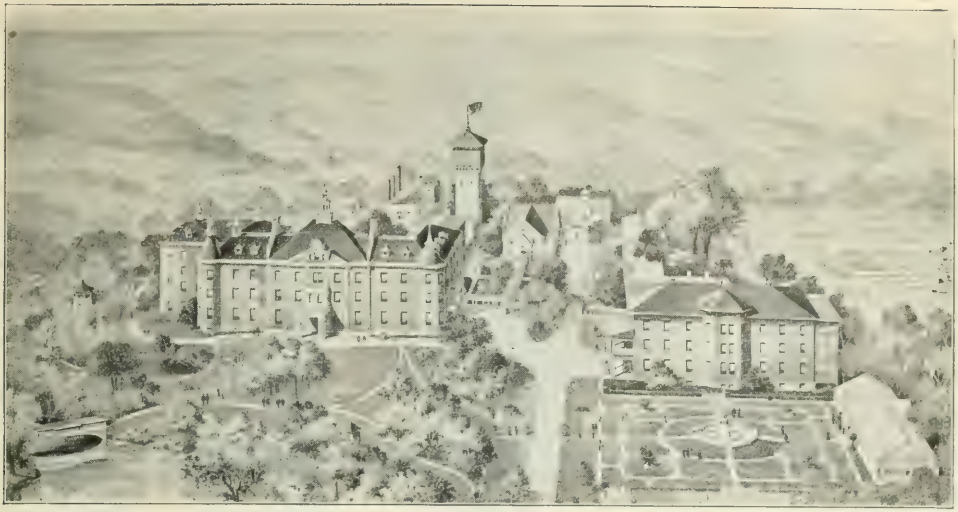

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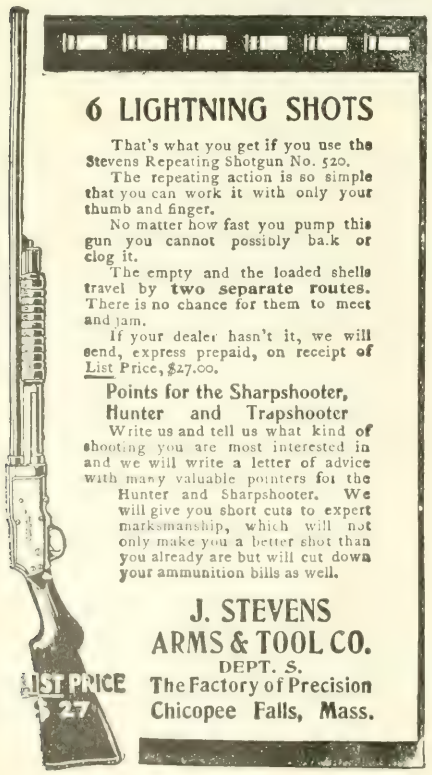

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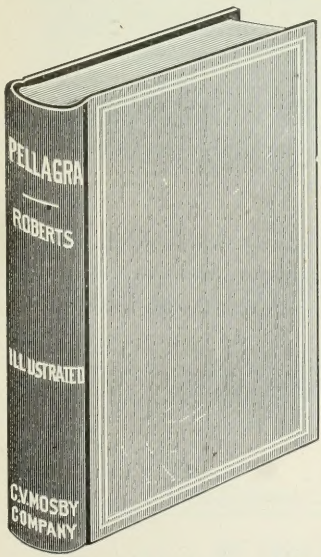

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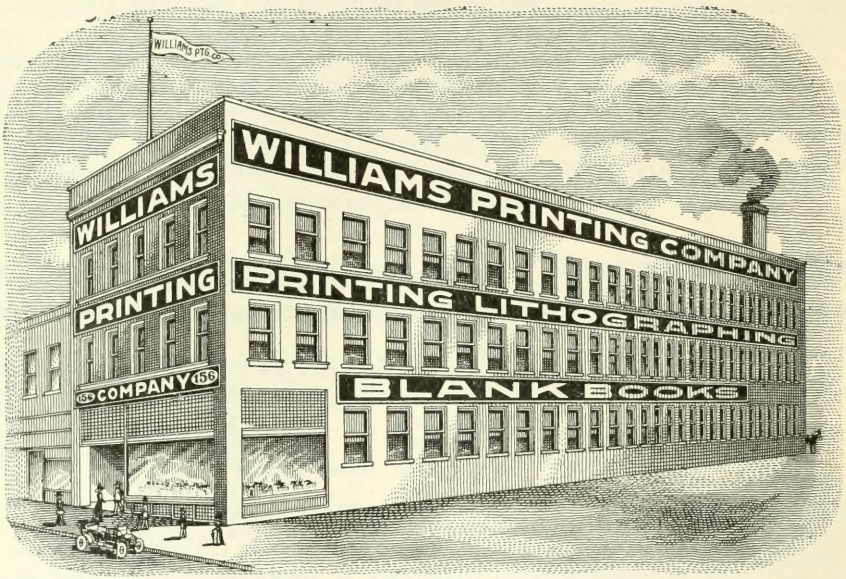

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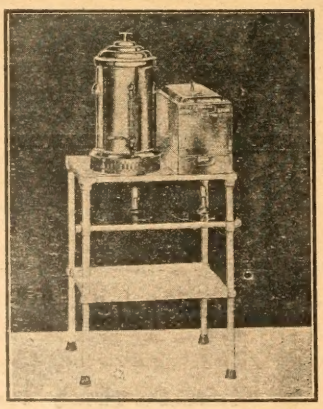

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